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ABSTRACT OF THE DISCLOSURE

5 A reduced rank adaptive digital filtering method is described for
a received signal consisting of a sequence of $N \times 1$ received vectors.
Each received vector is formed from a group of N successive samples.
 $D + 1$ basis vectors are generated where D is less than N and the
dimension of a desired reduced rank subspace. Each successive basis
vector is generated by multiplying an immediate preceding basis vector
10 by the covariance matrix for the sequence of received sample vectors
and the first basis vector is formed from a given or estimated steering
vector. D filter coefficients are generated from correlations between
pairs of basis vectors. The adaptive digital filter of the present invention
achieves near optimal rank performance with substantially fewer
15 training symbols than heretofore possible.